

Application No.: 10/518,185
Amendment Dated: January 31, 2007
Reply to Office Action of: October 31, 2006

MAT-8579US

Amendments to the Drawings:

The attached sheet of drawing includes changes to Figure 1. This sheet replaces the original sheet.

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Remarks/Arguments:

Claims 1-3, 5, 7-9, 11 and 13-16 have been amended. Claim 17 has been added. No new matter is introduced herein. Claims 1-17 are pending.

Fig. 1 has been objected to. In particular, blocks 102 and 109 are mislabeled as a "non-linear distortion compensating section" and "instantaneous power calculator," respectively. Blocks 102 and 109 have been amended accordingly. Applicants respectfully request that the objection to Fig. 1 be withdrawn.

The title has been objected to as not being descriptive. The title has been amended accordingly. Applicants respectfully request that the objection to the title be withdrawn.

Claim 2 has been objected to. In particular, claim 2 includes a typographical error. Claim 2 has been amended accordingly. Applicants respectfully request that the objection to claim 2 be withdrawn.

Claims 5, 7, 11 and 13 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. In particular, that claims 5, 7, 11 and 13 exclude a feature, "reference table updating section," that is a part of the transmission device as claimed. Claim 1 has been amended to recite an "updating section" and claims 5, 7, 11 and 13 have been amended to remove the phrase "instead of" and to clarify that "the updating section includes a compensation coefficient calculator." Accordingly, Applicants respectfully request that the rejection to claims 5, 7, 11 and 13 be withdrawn.

Claims 1-15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over prior art admission by Applicants (defined herein as "AAPA"), at page 1, lines 12-27 of the subject disclosure, and Nagasaka (JP 2002-5773). Although the Office Action, at page 5, does not include claim 16 as being unpatentable over AAPA and Nagasaka, Applicants believe claim 16 was inadvertently excluded in the § 103 rejection because it is discussed on page 19 of the Office Action. Accordingly, Applicants also address the rejection of claim 16. It is respectfully submitted, however, that claims 1-16 are now patentable over the cited art for the reasons set forth below.

Claim 1, as amended, includes features neither disclosed nor suggested by the cited art, namely:

... a non-linear distortion compensating section for compensating non-linear distortion of an input orthogonal base-band signal that is digitally modulated to form a distortion compensated signal by using non-linear distortion compensating data ...

... a phase/amplitude control section for controlling a phase and an amplitude of at least one of 1) the feedback signal distributed by the modulation signal distributor and 2) a reference signal based on the input orthogonal base-band signal ...

... a signal combiner for generating a combinatory signal based on the feedback signal and the reference signal, at least one of the feedback signal and the reference signal that are provided to the signal combiner being phase and amplitude controlled by the phase/amplitude control section ...

... an updating section for updating the non-linear distortion compensating data based on the input orthogonal base-band signal and the combinatory signal provided by the signal combiner ... (Emphasis added)

Support for the amendment can be found, for example, at p. 7, line 1 - p. 8, line 18; p. 9, lines 6-11; p. 12, lines 19-23; and Figs. 1, 2 and 3. Claim 1 has also been amended to clarify the language. Claims 2-3, 5, 7-9, 11 and 13-16 have been amended to correspond to amended claim 1.

AAPA discloses that a value of an input base-band signal is used to reference a distortion compensation table in order to compensate non-linear amplitude and phase distortion in the input base-band signal (p. 1, lines 18-20). AAPA does not disclose or suggest Applicants' claimed features of "a phase-amplitude control section for controlling a phase and an amplitude of at least one of 1) the feedback signal ... and 2) a reference signal based on the input orthogonal base-band signal" (emphasis added). These features are neither disclosed nor suggested by AAPA. Instead, AAPA discloses a non-linear distortion compensating table (a non-linear distortion compensating section) that is used to compensate the input base-band signal for non-linear distortions in amplitude and phase.

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In addition, AAPA does not disclose or suggest Applicants' claimed features of "a signal combiner for generating a combinatory signal based on the feedback signal and the reference signal" or "an updating section for updating the non-linear distortion compensating data based on the input orthogonal base-band signal and the combinatory signal" (emphasis added). These features are neither disclosed nor suggested by AAPA. Thus, AAPA does not include all of the features of claim 1.

Nagasaka discloses, in Figs. 6-8, a non-linear distortion compensating circuit that includes distributors 19 and 21, subtractor 14 (adder 29), attenuator 13 and delay circuit/phase shifter 20 (paragraphs [0047] and [0049] of the machine translation). Nagasaka does not disclose or suggest Applicants' claimed features of "a signal combiner for generating a combinatory signal based on the feedback signal and the reference signal" where the reference signal is "based on the input orthogonal base-band signal" (emphasis added). These features are neither disclosed nor suggested by Nagasaka. Instead, Nagasaka discloses a non-linear distortion compensating circuit that includes adder 29 (or subtractor 14). Thus, as disclosed in Nagasaka, both signals combined by adder 29 (or subtractor 14) undergo distortion compensation. Therefore, Nagasaka cannot disclose or suggest an updating section that updates the non-linear distortion compensating data based on the input base-band signal and the combinatory signal, as recited in claim 1. Furthermore, Nagasaka does not disclose or suggest a phase/amplitude control section that controls the phase and amplitude of at least one of a feedback signal and a reference signal. Thus, Nagasaka does not include all of the features of claim 1. Accordingly, allowance of claim 1 is respectfully requested.

Claims 2-16 include all of the features of claim 1 from which they depend. Accordingly, claims 2-16 are also patentable over the cited art.

Claim 17 has been added. No new matter is introduced herein. Support for claim 17 can be found, for example, at p. 6, lines 21-22; p. 15, lines 4-7; and Figs. 1 and 3. Claim 17 includes all of the features of claim 1 from which it depends. Accordingly, claim 17 is also patentable over the cited art.

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In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,


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Attachment: FIG. 1 (1 sheet)

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